APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,400	03/02/2005	Sami Poykko	59643.00578	3257

32294	7590	12/06/2006		

SQUIRE, SANDERS & DEMPSEY L.L.P.
14TH FLOOR
8000 TOWERS CRESCENT
TYSONS CORNER, VA 22182

EXAMINER
HUYNH, NAM TRUNG

ART UNIT	PAPER NUMBER
2617	

DATE MAILED: 12/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/526,400	POYKKO ET AL.
	Examiner	Art Unit
	Nam Huynh	2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>30 June 2006</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1,2 and 4-27</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1,2 and 4-27</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>6/30/06</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

Response to Amendment

This office action is in response to amendment filed on 6/30/2006. Of the original claims 1-26, claims 1, 4, 5, 17-23, 26, and 27 have been amended and claim 27 has been added. Upon further review of the claims, the Examiner respectfully submits that a 35 USC 101 rejection is proper as will be explained below.

Claim Rejections - 35 USC § 101

1.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-2, and 4-25 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim 1, the claims recite a method of estimating the location of a mobile device. Based upon evidence from the specification and independent claims 18-23, the Examiner asserts that this method is a computer instruction or program performed by a processor that comprises functional descriptive material or data structures representing descriptive material. The basis of this assertion is that the method includes "collecting location information", "selecting at least one of a plurality of different location methods", "providing a location estimate", and a final step of "determining a virtual base station estimate", which is an algorithm, but does not define any functionality to be realized. Therefore this claim is considered as non-statutory because of the lack of functionality and applicability.

Regarding claims 18-23, the claims are similar to claim 1, but further define "determining a virtual base station estimate" by presenting mathematical algorithms. In

addition to the reasons stated above in regards to claim 1, the claims define nonstatutory processes because they consist of solely mathematical operations or abstract ideas without some claimed practical application.

Regarding claim 27, the claim recites a system for estimating the location of a mobile device that comprises several "units". The Examiner believes that these units are not physical "units" or computer components, but are "units" in software or program code. Since a computer program is merely a set of instructions capable of being executed by a computer, and the computer program itself is not a process, the claim is treated as a claim for a computer program without the computer-readable medium needed to realize the computer programs functionality, and therefore is considered as nonstatutory functional descriptive material.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 26 does not comply with 112 2nd paragraph because it fails to be constructed to cover the corresponding structure described in the specification and equivalents thereof because it is unclear what those means are referring to in accordance with the specification.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

4.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

> 1.   Determining the scope and contents of the prior art.
> 2.   Ascertaining the differences between the prior art and the claims at issue.
> 3.   Resolving the level of ordinary skill in the pertinent art.
> 4.   Considering objective evidence present in the application indicating
>   obviousness or nonobviousness.

5.   Claims 1-17 and 24-27 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Havinis et al. (US 6,295,454) in view of Sheffer et al. (US 5,844,522).

A.   Regarding claims 1, 26, and 27, Havinis et al. discloses a system and method for

providing location information for terminal-based position calculation comprising a

Serving Mobile Location Center (SMLC) that can allow a mobile station (MS) to obtain

(collect) positioning measurements (location information) (column 4, lines 63-64). The

SMLC also chooses an optimum positioning method available that can be network or

terminal based (column 4, lines 14-20) via a command message (column 5, lines 16-

28). Once the MS obtains the command message, the MS calculates its own location

based upon its own positioning measurements, the additional information supplied by

the network, and a location function within the MS (column 5, lines 36-40). However,

Havinis et al. does not explicitly disclose the determination of a base station estimate.

Sheffler et al. a wireless network based location system and method that uses an

existing wireless communication network to locate the position of any active phone or

transceiver unit in the network (abstract). In the scope of the invention, a

communication dispatch center (CDC) comprises workstation software that monitors the movement of the mobile station through RSSI readings of agile vector sensors (AVS) installed in each cell site of the network (column 7, lines 36-46). In an example situation, when a phone moves east, but is still connected to an original active cell N (serving cell), the CDC workstation software will determine that the RSSI reading of the active cell is becoming very low, and will also determine that the phone is moving away from the other three AVS units (neighboring cells). As a result of this, the CDC workstation makes a determination that more AVS units closer to the east direction (estimating the direction of the phone) of the AVSs must be added to the original neighbors list (column 20, lines 43-57). The AVS or base station in the estimated direction of the phone that is added to the neighbors list renders the "virtual base station estimate". Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Havinis et al., to include the determination of a virtual base station estimate, as taught by Sheffer et al., in order for the SMLC to hone in on the currently assigned channel to track or locate the mobile station even if intra-cell handoff has occurred.

B.   Regarding claim 2, Havinis et al. discloses an example of a message received by the MS containing current cell ID and a Timing Advance (TA) value for a serving base station in order for the MS to calculate its positioning (column 7, lines 24-26).

C.   Regarding claim 4, the limitations are rejected as applied to claims 1 and 2.

D.   Regarding claims 5-7, Sheffer et al. discloses that the predicted neighboring cells are analyzed (column 20, lines 55). This analysis renders the virtual measurement and

the RSSI readings of the active cell and its neighbors are the real measurement. This location method utilizes cell identity and RSSI values.

E.   Regarding claim 8, Havinis et al. discloses that positioning information within a message shall indicate to the Mobile Switching Center/Visitor Location Register (MSC/VLR) whether the MS can support terminal-based positioning, the type of terminal-based positioning methods supported, and whether the MS is capable of performing location calculations based upon the positioning measurements. Once the MSC/VLR receives this data it is sent to the SMLC so that it can determine the optimum positioning method (column 4, liens 50-59).

F.   Regarding claim 10, Havinis et al. discloses that the MS is commanded to begin the collection of location information (column 5, lines 21-22).

G.   Regarding claim 11, Havinis et al. discloses a Position Measurement Module (PMM) within the MS to perform positioning measurements (column 5, lines 41-44) therefore rendering the arrangement of the mobile device to measure a level of at least one type of information.

H.   Regarding claims 12, 13, and 16, Sheffer et al. discloses that the phone detects the RSSI (received signal level) of the serving cell and neighboring cells (column 20, lines 43-57).

I.   Regarding claim 14, Havinis et al. shows in figure 5 a MS that is represented by a cellular phone (item 20).

J.   Regarding claims 15 and 17, Havinis et al. discloses that a Base Station Controller (BSC) provides the current cell ID and Timing Advance (TA) value for a

serving Base Transceiver Station (BTS) and sends this to MSC. The MSC then sends

this data to the SMLC, which is then sent to the MS in order to calculate its position

(column 7, lines 21-35). The current cell is selected in order to measure information

that is sent to the MS for the calculation of its position, therefore rendering the

limitations of claim 17.

K.   Regarding claims 24-25, Havinis et al. discloses an iterative method in figure 8

by showing the loop-connecting step 870 and 685. A linear method is shown by the

flow downward flow of the steps.

Allowable Subject Matter

6.   Claims 18-23 would be allowable if rewritten or amended to overcome the

rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Response to Arguments

7.   Applicant's arguments with respect to claims 1-2 and 4-27 have been considered

but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Nam Huynh whose telephone number is 571-272-5970.

The examiner can normally be reached on 8 a.m.-5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, George Eng can be reached on 571-272-7495. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NTH
11/21/06
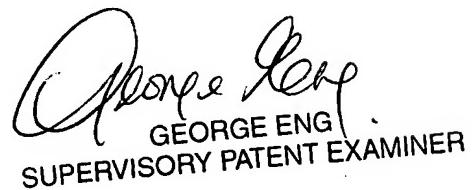
GEORGE ENG
SUPERVISORY PATENT EXAMINER